

Uncle Sam Sets the Standards of Home Measurements

THE ultra-fashionable are aware with what rapidly styles in dress change. But styles in fads, in automobiles, in illnesses, in hairdressing, in landscape gardening and a multitude of other things change also, and some are extremely temporary in duration.

Recently a species of style has penetrated to the very heart of the culinary department of households, and in a thoroughly modern and progressive home a cook who measures by any-

the Union, the bureau was convinced that its immediate duty was to standardize sets of measures, and, further, to see that each state had sets so standardized in its possession. This would insure a uniformity of standards.

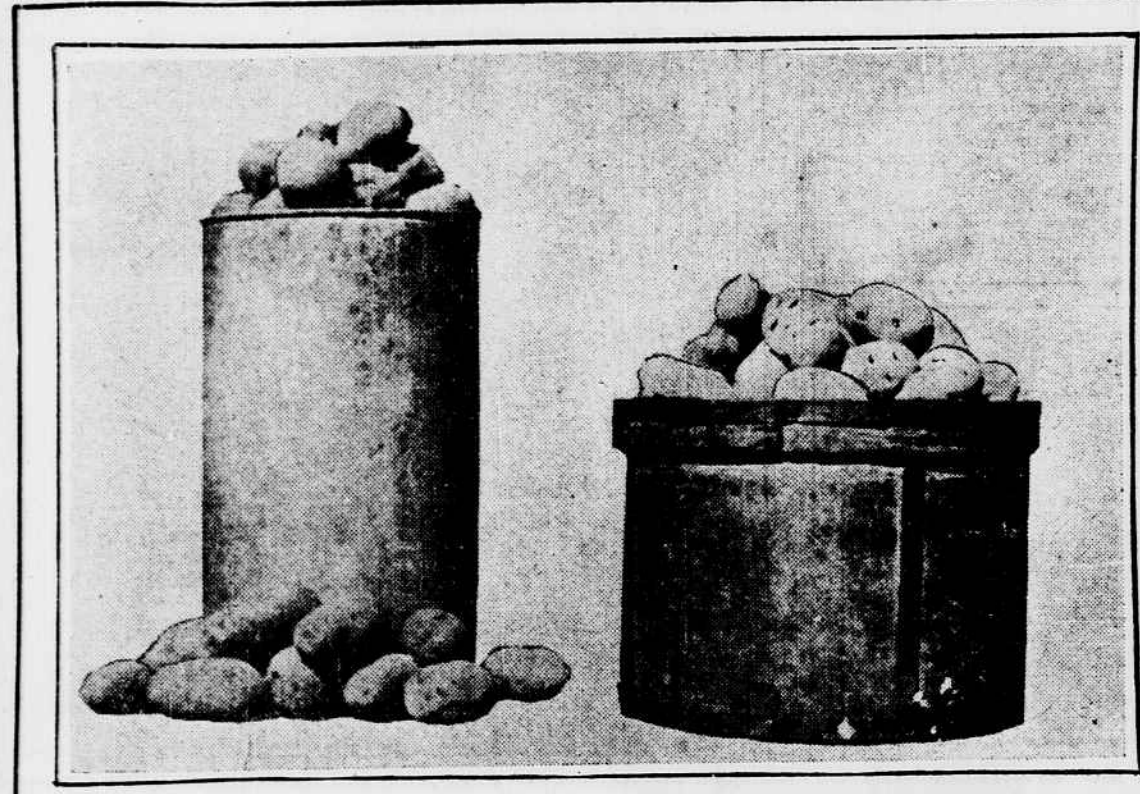
The government also urged each state to compel the maintenance of inspection service. The investigation by the government disclosed the most astounding and deplorable conditions among merchants and dealers. Fraudulent methods were widespread, and in

NO Longer May the Up-to-Date Cook Use "a Pinch of Salt" or "Sweeten to Taste"—Diet of the Growing Child Must Be Carefully Regulated—Bureau of Standards Explains the "Scientific Way"—Weights and Measures in the Kitchen—Deceptions Practiced by Unscrupulous Dealers—Thermometers in the House—The Question of Fuel.

grade scale is different, the ice point being zero and the boiling point 100 degrees.

Many households wish to test their thermometers. A thermometer can be tested very easily by filling a tumbler with ice shavings and ice-cold pure water and thrusting the bulb of the thermometer into this mixture. When the mercury of the thermometer has fallen to 32 degrees F., or 0 degrees C.,

warmer when the fur is worn on the inside instead of on the outside is because the air cannot get in and displace the air between the hairs. Why will a black kettle cool so much more rapidly than an aluminum or nickel one? Simply because it does not keep its heat but is constantly radiating it. That is why the best stoves are black. The best kettles for a coal stove are black on the bottom. For a gas range it makes little difference, because the heat is given not so much by radiation as by actual contact with the gas flame. In recent years the advancement in



TWO MEASURES WITH SAME CAPACITY, YET "STACKING" IN THE TALLER MEASURE LEAVES THE POTATOES ON THE TABLE AS SURPLUS.

thing so vague and unscientific as a "pinch of salt," "sweeten to taste," etc., is regarded as far behind the times and hopelessly old-fashioned.

Uncle Sam has come to the rescue of many a household, he has wrestled with dilemmas that have been accepted as inevitable, and has solved them satisfactorily. The bureau of mines has issued a pamphlet on the heating of offices and houses. The health department is constantly studying and explaining the best methods of defending the child from weaknesses and ill health. The Department of Agriculture has contributed its share to the child welfare movement, and the bureau of standards has been engaged recently in an extensive study of household measurements, including gas, water, light, heat, time, measurements and measurements used exclusively in the kitchen. Their object is to secure for every household the cream of efficiency.

The first step toward this much desired end is a fair knowledge of the necessary measuring utensils. The average housewife does not yet fully appreciate the significance of measuring nor the importance of its role, an importance which cannot be overestimated.

For instance, from the very dawn of an infant's life, if strict hygiene is to be observed, measurements are made. There must be scales in which to weigh the baby; a "fever" thermometer is the best prognosticator of a coming illness, and to be forewarned is to be forearmed. There are measurements to determine its height, its girth, its strength. The encephalograph registers the power of its endurance; the chronograph, of its perceptions.

The diet of a growing child must be carefully regulated if the best results are to be obtained; through exact measurements can its mother satisfy herself as to this. Not only during infancy and youth are these measurements desirable, but also during an individual's whole life.

The bureau advises each household to provide itself with four sets of measuring appliances, namely:

1. A test set of weights and measures.

2. Measures for measuring gas, water, electricity, etc.

3. Special instruments for measuring temperature, pressure, moisture.

4. Special measures for the kitchen.

After an investigation by the government, which included every state in

some cases openly tolerated by purchasers.

There are two modes of procedure necessary to combat and eradicate such universal dishonesty: systematic inspection and some attention on the part of households to accurately checking purchases. A premium is actually put on cheating when false standards are allowed to prevail; an honest merchant has poor encouragement.

It is wise to make a comparison between package and hand good the most household, ambitious to become efficient. Discovers very quickly that a test set of scales is an essential. There are three good types of scales. The equal arm stabilized scale, which is reliable, but a trifle more expensive than the spring balance scale. The spring balance scale is convenient, because it takes no table room, but may be suspended from a wall. The steelyard type also may hang from a bracket, and has a large capacity.

The twenty-pound scale ordinarily answers every purpose in a home. Of these three types mentioned the spring balance scale is probably the least accurate. The equal arm type has the disadvantage of loose weights, which may be lost or mislaid.

All commodities from the grocer and butcher and other dealers may be checked by means of a scale to insure accuracy. A scale demands respect; it will not submit meekly to being banged around or jarred, and will retaliate by getting out of order. The scale must, furthermore, be kept scrupulously clean, perfectly dry and in balance.

When a delivery of goods purchased is made and the housewife wishes to weigh a commodity she first removes the wrappings. The true weight, and that to which she is entitled, is the weight of the commodity without any covering. In case she finds that short weight has been delivered she notifies her dealer, and unless the practice is rectified she has the privilege of giving her patronage to other dealers.

Shortages are frequently found in most purchases, and in order to cover a shameful discrepancy the butcher will explain that the meat was weighed before it was trimmed. These trimmings are of use to the housewife and there is no adequate reason assigned for the loss.

The best liquid measure is of enamel-

ware or metal, and strong enough to withstand the ordinary bumps of the everyday kitchen. It is cylindrical or conical in shape, with the diameter larger at the bottom than at the top. A liquid graduate measure is another necessity, and the most satisfactory are clear cut, straight and long enough to enable a quick, accurate reading.

The best dry measures are constructed of well varnished wood or metal. The wooden ones of the best type have around the top a band of metal. Receptacles such as demijohns, jugs and jugs are rarely perfectly reliable. In fact, as a means of measuring it is advisable to discard them.

The bureau believes that all dry commodities ordered by weight will give better quantitative results than those ordered by dry measure. The former method of measuring is employed endirely throughout the west, and the eastern states are adopting it.

The so-called "bottomless measures" with such a small diameter that "stacking" is the rule, have been prevalent throughout the east. The government

also found any number of fraudulent buckets. These buckets look honest and innocent, but in reality have false sides and bottoms.

Liquid measures have also been made in a fashion to deceive the general public. Five-gallon milk cans with a three-gallon capacity, for example. The sides of milk cans were opened and divulged trade secrets—a three-gallon can within a five-gallon. The buyer paid for two-fifths, or 40 per cent of the liquid which he never received, and suffered subsequent losses perhaps for years.

Unless great care is exercised there is a trap for the purchaser of goods in original packages, which will continue.

On all package goods there are labels stating specifically the quantity contained. Often, upon investigation, it is found that the specified quantity is not there. There is a law which emphatically asserts that the contents of the packages equal that quantity printed on the label.

Of course it is impossible to weigh a ton or more of coal on the "family" scales. Its weight can be checked only roughly by noting the capacity of the bin. But where a shortage is suspected and a report made to an inspector, there will be a provision made for reweighing the coal.

Time is a factor in weighing ice. If it is left for several hours and then weighed, it has, of course, lost weight



FRAUDULENT FIVE-GALLON MEASURE; SIDE CUT AWAY SHOWS THREE-GALLON CAN INSIDE.

and it is impossible to determine the original weight.

Often it is convenient to have at hand a few simple principles for estimating the capacity of tanks, boilers or other containers, cylindrical or rectangular in shape. Brushing up on one's arithmetic is often necessary in order to do this.

To be sure, every one knows that to find the contents or volume of a rectangular vessel one multiplies length by width by height, using the same unit of length. The formula for obtaining the cubical contents of a cylindrical tank is: Capacity equals 0.7854 2h, or multiply the diameter by itself, multiply the product by the height and the whole thing by 0.785. To reduce cubic inches to gallons, divide by 231; cubic feet to gallons, multiply by 7.48.

A teaspoon measure is a handy article to have about the kitchen. The regular teaspoon measure has three spoons, the smallest measuring one-fourth of a teaspoon, the medium size one-half and the largest size a whole teaspoonful.

In a sense, the body serves as a standard for measuring temperature. One puts his hand on the smooth polished surface of a marble column on a brisk winter's day and announces that it is cold. That is to say, it is cold when compared with the temperature of the body, which is 98½ degrees Fahrenheit.

Time is not an accurate standard, and cannot be relied upon at all in measuring temperatures in cooking, for instance.

Objects of different materials are often deceptive in their temperatures. A bare floor is colder to the feet than a rug, yet there may be no perceptible difference in the temperatures of the two. The rug is a poor conductor of heat, the floor is a good conductor.

To make measurements of temperature correctly a household needs several thermometers, one for ascertaining the temperature of a room, one for the bath, one for outdoors, one for the milk, a clinical thermometer, etc.

It is interesting to observe the process in making a thermometer. A glass tube with a small diameter is first selected and onto the end of this a glass bulb is blown. This bulb and a little of the stem of the tube is filled with mercury, the air removed and the tube carefully sealed. It is next placed in the places where the top of the mercury touches the tube at these different temperatures are marked. A scale is made on the glass. The ice point on the Fahrenheit is 32 degrees, the boiling point 212 degrees. The centi-

thermometer is correct at this point and in all probability correct at all temperatures.

Room thermometers, to give the best results, are mounted four feet from the floor, away from the source of the room's heat, and not on an outside wall.

In the well regulated household oven thermometers are used more and more for testing slow, moderate and hot ovens. A slow oven, for the cooking of such dishes as meringues, custards, etc., runs from 250 degrees to 350 degrees F. Cookies, cake, bread, ginger-

bread, baked best in a moderate oven which ranges from the 350 degrees of a slow oven to 400 degrees. A hot or "quick" oven is anything between 400 degrees and 450 degrees F., and is absolutely essential in making the most delicious popovers, rolls, biscuits and pastry of all kinds.

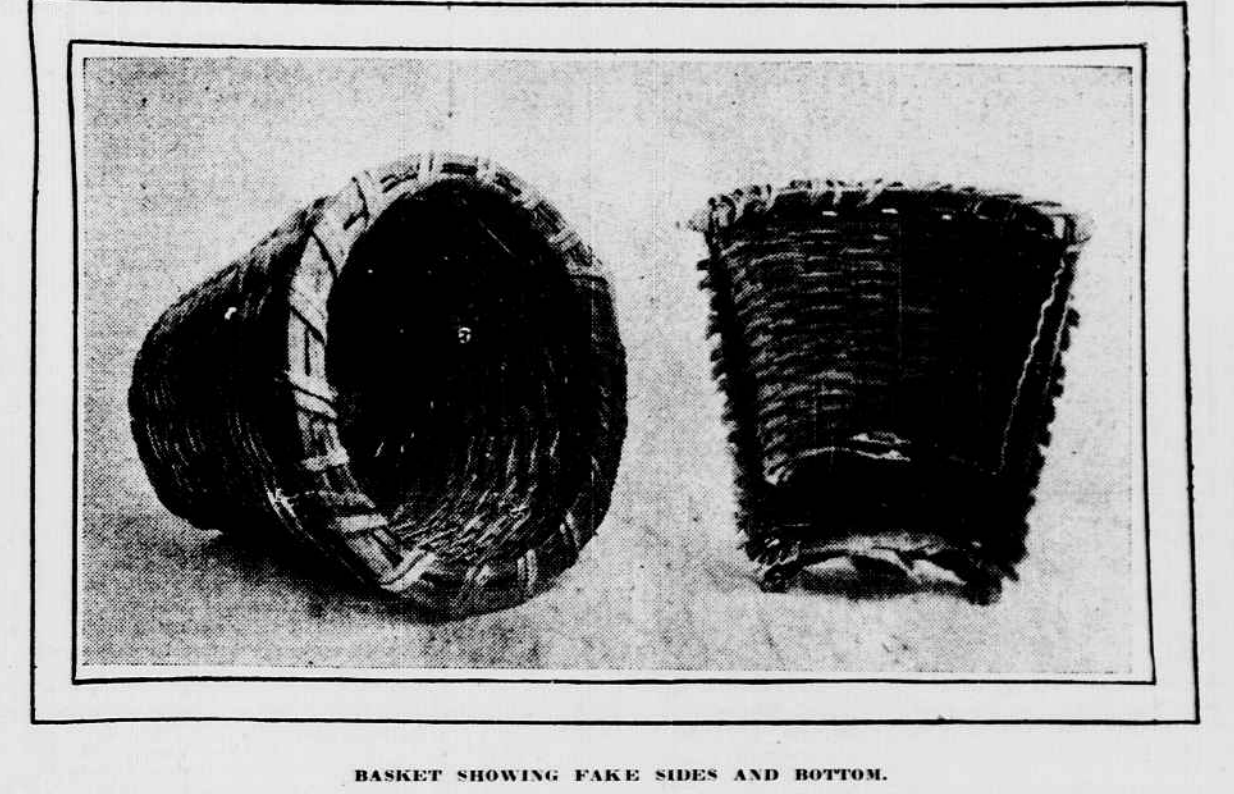
A good household or bath thermometer can be utilized for determining and regulating the temperature of refrigerators. This is important when one stops to consider that milk, meats and butter, to keep fresh, must be put in the coldest part of the refrigerator. The coldest spots in the ordinary refrigerator are near that place where the air leaves the ice chamber. Milk kept at a temperature of sixty degrees will develop, in a single day, fifteen times more bacteria than milk kept at fifty degrees.

There have been divers opinions on the heating value of various fuels. The bureau has demonstrated that in the great majority of cases gas is cheaper than coal unless heat is needed for a long period of time. The most satisfactory adjustment of the flame of the gas stove burner keeps the blue-green part of the flame approximately half the length or height of the whole flame.

If too little air is present the flame will glow like a long, shimmering tongue of bright, hot yellow. On the other hand, if there is too great a supply of air the flame will be short and accompanied by a slight noise resembling somewhat a distant roar.

Conservation of heat for purposes of cooking was tried experimentally, and finally the fireless cooker was evolved, and in many homes is regarded as a most welcome labor-saving device.

There are many varieties of heat insulators. The good ones pack a large amount of air in the cells between the fibers of a material. Wool, feathers, cork, cotton are all good insulators. Every one has observed how warm a sweater is in calm weather, but a severe wind takes all the comfort out of a sweater unless a closely woven wrap is worn. This is because the warm air in the cells of the fiber of the sweater is constantly being displaced by cold air. The reason a fur coat is so much



BASKET SHOWING FAKE SIDES AND BOTTOM.

the lighting of homes has been marked. In many cases homes have not only been better lighted, but a reduction in light bills has followed. This reads like a tale from a fairy book, but proofs are plentiful. If people were quizzed in regard to the cheapest light possible, no doubt some of them would unhesitatingly declare candles. As a matter of fact candles are very expensive; 1,000 candle hours would cost every cent of \$2. Kerosene oil lamps burn at a rate of 10 cents an hour, amount to only 20 cents.

The most economical way to use gas is to provide each lamp with a mantle. A mantle burner gives a far better and steadier light than an open flame, and about one-fourth as much gas is consumed.

In electric lighting there are three kinds of lamps, the gem, the carbon and the tungsten. An inducement to burn the gem and carbon lights is tendered by many power companies, who furnish these lamps without charge. The tungsten lamp, the bureau declares, is superior to either of the two others. Even though the consumer is obliged to pay for the tungsten lamp he is more than compensated by the high efficiency of the light. The tungsten lamp today is much less fragile than it was two or three years ago. If this were not true it would not be so generally used on street cars.

Two most important "don'ts" for working by artificial light are: Don't work without a shade on your lamp, and don't ever allow yourself to face the light.

What is home without a timepiece? Whoever entered a clockless home? One sees many homes with many kinds of clocks, and it is not a little amazing to observe the clocks that are not running.

Clocks, and watches too, that are kept at a constant temperature behave the best. Timepieces also resent being suddenly and abruptly moved, and prefer standing upright. Then if they are kept clean and are wound every day they will do their work well.

Domestic science courses in schools and colleges are growing in universal popularity, and to them people look for the best and most progressive methods in operation in the home.

The metric system also is coming into favor in the United States, and eventually will be adopted by households. Each year the bureau of standards intends to issue bulletins and publications that will be acceptable and instructive in all homes throughout America.

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Rare Old Masterpieces of Map-Making Preserved in Library of Congress



P. LEE PHILLIPS, CHIEF OF THE MAP DIVISION, LIBRARY OF CONGRESS.

NO trace of antiquarian dust lingers about the carefully preserved and displayed rare old masterpieces in the map division of the Library of Congress, under its chief, P. Lee Phillips, but they carry a richness of history and of sentiment, too, in their distorted representations of places and their quaint illustrations of customs and peoples.

Each of these maps has a story, which Mr. Phillips points out graphically to those who have eyes to see under the lines of the odd-looking charts—stories of early discoveries and explorations of the great country which Columbus accidentally upon. He points out on these charts, meaningless to the heedless, romances in the settling of the colonies; he also will tell how the maps came to be printed, and, if you are very appreciative, the remarkable ways by which some of them were secured for the Library.

Not all the maps are old, some in-

terest because of their design and others, like the map of Vicksburg printed on wall paper in 1863, by the manner or reason of their preparation.

The Herrman map of Maryland and Virginia, published in 1673, is one of the rarest maps of the western hemisphere, the only known original being in the London Museum. Through the efforts of the Library of Congress, an excellent reproduction has been obtained for the Library of Congress and is to be found in the delivery room. This and the map made by Capt. John Smith (1608) for over 200 years formed the basis of these sections, and each was used in the boundary disputes between Maryland and Virginia, remaining unsettled until 1854. Herrman's is considered the first adequate map of Maryland.

Although no copies are known to exist in this country, Washington, it seems, must have examined one, for he speaks of it as a map "admirably planned and equally well executed."

It consists of four sheets, each about fifteen by nineteen inches, and when put together is a yard wide by a little over thirty inches high. A peculiarity

ODD Charts, Many of Them Highly Colored and Profusely Illustrated, Tell Stories of Early Discoveries in America—The Herrman Map of Maryland and Virginia Is One of the Rarest Maps of the Western Hemisphere—It Covers the Coast From Present New Jersey to a Point Somewhere in North Carolina—Capt. John Smith's Map—A Wonderful Globe Map Divided Into Twelve Gores.

is that the north is at the right instead of the top of the page. Unlike many of the maps of that period, it is uncolored, but on the right is a medallion engraving of the explorer in general appearance not unlike the familiar portraits of John Milton. The coat of arms of Lord Baltimore and the royal arms of Great Britain, elaborately engraved, are prominent adornments of the page.

Although Herrman was quite familiar with a great part of the territory covered by his survey, he could only make what, in the slang of the day, would be called "stabs" at describing some portions. Thus he marks the land "between the James river and the Roanoke as for the most part low, sunken, swampy land not well passable, and other devious creatures, undoubtedly good reasons for omitting a personal survey.

A picture of "an Indian canoe, made out of a tree with their battles (paddles) and oars," was deemed desirable to show the person of that day how the natives traveled by water. He makes the amusing note that the New Jersey part "is inhabited only or most by Indians."

Some of the manors, including his own, Bohemia, are indicated, and Delaware bay, Patowmack river and York river are charted and show that he made elaborate soundings. The map was engraved by a celebrated artist, William Faithorne, but Herrman was quite disappointed at the result, for he described the engraving as "altered over by the engraver, Faithorne, defiling the prints, with many errors. It covers the coast from present New Jersey to a point somewhere in North Carolina, and extends back about as far as the longitude of Washington."

Herrman was apparently an adventurer of the best type of his time. Born in Prague, Bohemia, educated there as a surveyor, he came early to the Dutch colonies at New Amsterdam, where he was warmly welcomed by Petrus Stuyvesant, the iron ruler of that busy settlement destined later to



AUGUSTINE HERRMAN, FIRST LORD OF BOHEMIA-DELEWARE, MAKER OF THE FAMOUS HERRMAN MAP.

be the commercial center of the then undreamed-of United States. Possessed of some means, large amount of land, and a disposition as positive as that of the one-legged local tyrant, it is not strange that a disagreement

between them should arise or that strong measures should be taken by each. The stories differ as to the causes of the quarrel—some say it was a love affair, but that is hardly probable; others say it was through Herrman's failure in business—but as a result the Dutchman caused the arrest of the Bohemian.

One version is that Herrman feigned madness and refused to go to jail unless he could ride there on his favorite white horse, while other historians—perhaps the Dietrich Knickerbocker order—say that a severe illness secured the conviction of the map maker on some charge which involved a death sentence.

The story runs that, under the law of the land, a condemned criminal had a right to make one request, which must be granted, before execution, and Herrman requested that his white horse be brought to his cell door that he might find a comrade the faithful friend in farewell.

All stories agree that at exactly the right moment Herrman mounted the tried charger, which, at his master's voice, dashed all opposition aside and carried him to the banks of the Hudson river. Closely followed by the Dutch pursuers, Herrman pressed the good horse, which took a flying leap into the river and swam with his master to the opposite shore, where, in the woods, rider and steed were quite safe.

He found his way to the Maryland settlements under Lord Baltimore, by whom he was well received and to whom he pointed out the great advantage which could be had from a map covering the colony. All he asked in return was a manorial grant and a patent of nobility. Lord Baltimore, quick to see the truth of what Herrman pointed out, but by means of such a map his grant from the crown might be extended, readily accepted the proposition, and eventually made Herrman first lord of Bohemia.

The only patent of nobility created in this country, and granted him a tract



AN ENGRAVING OF THE MARGIN OF THE JOHN SMITH MAP OF VIRGINIA.

of land said to contain over 20,000 acres, principally in Cecil county, Md. About ten years were required to complete the survey and make the drawings for the map. Besides the labor and effort Herrman expended about \$200,000 at present valuations to "den" the "Proceedings of the Council of Maryland, 1660" is the record of the "denization" of Herrman. Unfortunately, it is too long to set out in full, but

"Caecilius, absolute Lord and Proprietor of the Province of Maryland and Avalon, Lord Baron of Baltimore, etc., Declares him, Augustine Herrman, to be a free Denizen of this Province of Maryland. And Doe further, for us and our heirs, straightly ordaine that he be in all things treated as One of the Faithful People of us within this our Province of Maryland." Thus Herr-

(Continued on Fifth Page.)